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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/607,747

06/27/2003

Weijun Shen

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7590

07/14/2004

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EXAMINER

SHRIVASTAV, BRIJ B

ART UNIT

PAPER NUMBER

2859

DATE MAILED: 07/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/607,747

Applicant(s)

SHEN ET AL.

Examiner

Brij B Shrivastav

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 27 June 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6, 8, 12, 13 and 16-20 is/are rejected.
- 7) ☐ Claim(s) 7, 9-11, 14, 15, 21 and 22 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 June 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 6/27/03.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

### DETAILED ACTION

1. Claims 1 and 18 are objected, as in both cases essential method steps are missing. Similarly, claim 8 is objected for missing essential elements and their structural relationships.

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-6 rejected under 35 U.S.C. 102(b) as being anticipated by Gross et al (US 5,731,939).

As regards to claim 1, Gross et al teach a method of operating an imaging system having a main coil and a shield coil electromagnetically coupled to the main coil (figure 1, numerals 18, 20, 22, and 24; columns 2 and 3, lines 45-67 and 1-20). Further, Gross et al teach monitoring for an external environment<sup>al</sup> fluctuation of electromagnetism (figure 1, numeral 80 and 82; columns 5 and 11, lines 49-55 and 19-32), and controlling current flow through the main and shield coils based upon the monitoring using a quench heater (figure 1, numerals 26, 60, 62, 94 and 96).

As regards to claims 2-6, Gross et al further teach monitoring fluctuation of external electromagnetism using a plurality of coils wired parallel to the main and shield coils using electrically or mechanically activated sensor (figure 1).

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3. Claims 18-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Gross et al (US 5,731,939).

As regards to claim 18, Gross et al teach a method of operating an imaging system comprising a main coil, a shield coil positioned to shield an electromagnetic field generated by the main coil (figure 1, numerals 18, 20, 22, and 24; columns 2 and 3, lines 45-67 and 1-20), and an environmental fluctuation circuit operationally coupled to main and shield coils (figure 1, numeral 80 and 82; columns 5 and 11, lines 49-55 and 19-32), wherein the circuit has at least one detection coil and quench heater proximate the detection coil, including energizing the quench heater that the detection coil is in a non-superconducting state, and supplying current to the main coil and the shield coil until a predetermined current is reached while the detection coil is in the non-superconductive state and de-energizing the quench heater when the persistence switch is in the superconductive state (figure 1, numerals 26, 60, 62, 94 and 96; columns 6-10).

Claims 19 and 20 are rejected as Gross et al further teach monitoring the current flow through the detection coil(s) and energize and de-energize the quench heater for a predetermined threshold or zero current flow in the detection coil(s) (figure 1, numerals 13, 60, 80, 86, 98 and 96).

4. Claim 8 is rejected under 35 U.S.C. 102(b) as being anticipated by Gross et al (US 5,731,939).

As regards to claim 8, Gross et al teach a magnet system having a main coil (figure 1, numerals 18; columns 2 and 3, lines 45-67 and 1-20). Further, Gross et al

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teach at least one environmental fluctuation circuit operationally coupled to the main coil, the circuit including at least one detection coil, and a quench heater positioned proximate the detection coil (figure 1, numeral 80 and 82; columns 5 and 11, lines 49-55 and 19-32; and numerals 26, 60, 62, 94 and 96).

Claims 12, 13, 16 and 17 are rejected as Gross et al further teach environmental fluctuation circuit having electronic or mechanical activation to control sensor activation and coupled to the main coil (figure 1, numerals 80, 82, and 14).

NOTE: Patent US 6,717,781 also reads on limitations of claims 1, 8 and 18 to reject these claims under 35 U.S.C 102(e).

***Allowable Subject Matter***

5. Claims 7, 9-11, 14, 15, 21 and 22 are objected to as being dependent upon rejected base claims, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

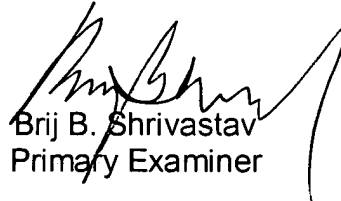
6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brij B Shrivastav whose telephone number is 571-272-2250. The examiner can normally be reached on 7 AM to 4 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diego F. F. Gutierrez can be reached on 571-272-2245. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Bbs  
June 29, 2004

  
Brij B. Shrivastav  
Primary Examiner